UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

March 15, 2007

REPLY TO THE ATTENTION OF:

SR-6J

Mr. Jerry C. Winslow
Principal Environmental Engineer
Xcel Energy
414 Nicollet Mall (Ren. Sq. 8)
Minneapolis, Minnesota 55401

RE: Comments to Alternatives Screening Technical Memorandum, Ashland/NSP Lakefront Superfund Site

Dear Mr. Winslow:

The United States Environmental Protection Agency (EPA) has reviewed the Alternatives Screening Technical Memorandum submitted by URS on behalf of Northern States Power Company (NSPW), (d.b.a. Xcel Energy) on January 22, 2007 for the Ashland/Northern States Power Lakefront Superfund Site. Pursuant to the Administrative Order on Consent (AOC), EPA requires NSPW to make modifications to the document based on the comments provided below. Under Section X of the Administrative Order on Consent (AOC), this letter constitutes a notice of deficiency and NSPW has 21 days to cure the deficiencies. NSPW is receiving the letter today, starting the 21 day clock to incorporate these comments and submit the revised document by April 6, 2007.

1. **General Comment**: For ex-situ treatment of soil unlimited excavation has not been discussed in Section 7. Unlimited excavation needs to be discussed in the technical memorandum.

2. **General Comment**: The remedial technologies for soil, sediment and groundwater have been discussed in this technical memorandum. Discuss the remedial technologies for the NAPL removal and treatment/disposal.

3. **General Comment**: HRC and ORC need to be included for technology screening.

4. **General Comment**: Since this is a Federal lead site, it is subject to the CERCLA on-site permit exemption. This should be discussed up front as a separate section and it should go through all the discussion and identify permits, approvals and reporting requirements that are ARARs and discuss how you will comply with the substantive requirements. You will not need to get state or local approvals for on-site activities, and there is discussion in the text and the tables that state you will.

5. **General Comment**: Sections 3 and 4 will need to be updated to reflect the required changes to the RI report.

6. **Section 5.2:** This section should include the State Air Program requirements (NR 400 Series). This appears in Table 5-1, and should be in Section 5.2.

7. **Section 5.4:** This section identifies chapter 30 requirements. It is assumed that lake bed fill can not be completed without action of the State Legislature and Governor potentially making implementation difficult.

8. **Section 5.5:** Identify the follow guidance as To-Be-Considered (TBCs), at a minimum, for implementation of alternatives in accordance with the NR 700 series:
   - RR709, Guidance for Cover Systems as Soil Performance Standard Remedies
   - RR519, Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance

   There may be other technical guidance on the WDNR guidance page (http://dnr.wi.gov/org/aw/rr/archives/pub_index.html) that NSPW should consider as TBCs, but those listed above are the most important.

9. **Section 7.3.2 and Table 7.4:** Are there areas where an infiltration reduction cover would be beneficial for vadose zone soils to protect the groundwater? If so, the alternative should be retained.

10. **Section 7.3.2.4, Page 7-5**: For an engineered surface barrier it is stated that installation of a cap over areas with contaminated soil may not be required because asphalt pavement and a fine grained low permeability soil unit are currently behaving as engineered surface barriers. It is also stated that these barriers also restrict infiltration which prevents contamination leaching from the unsaturated zone.

    The existing asphalt pavement and fine grained low permeability soil cannot be considered as an "engineered barrier" because the asphalt parking was not designed to act as an impermeable cap. Even if the asphalt pavement was designed to be an impermeable cap, it is not inspected or maintained to meet the requirements of the impermeable cap. Furthermore, the integrity and ability of any asphalt pavement in the area to prevent infiltration of precipitation has not been established. The Remedial Investigation report refers the site soil as being "fill" material which varies considerably across the site and includes silts, ash, cinders, solid and liquid MGP wastes, wood, glacial till and building demolition debris. Many of the fill constituents appear to be permeable and it is highly questionable whether they will restrict infiltration and certainly will not prevent contaminant leaching from the unsaturated zone. Furthermore, the fill material is not a clean fill material. The fill material and asphalt were not designed and constructed to meet the specifications of an engineered barrier. Based on the information above the existing asphalt pavement and the fill material cannot be considered as engineered surface barriers. Therefore, include the following capping options for surface soil for the containment option:

- Asphalt Cap
- Clay Cap
- Multi-layer Cap consisting of 2-foot of clay, drainage layer, soil and top soil with vegetation.
- Multi-layer Cap with Geomembrane.

All of the above containment options need to be considered in the technical memorandum.

11. **Section 7.3.2.4, Containment**: It is stated the in-situ treatment alternatives may be limited by site conditions. The existing NSPW facility building and buried structures (gas holders) may prevent the installation of injection or extraction wells. The remedial options should consider demolition of buildings and removal of gas holders as remedial options and that will make it easier to consider in-situ treatment technologies. Therefore, demolition of building and removal of buried structure should be considered for screening of remedial technologies.

12. **Section 7.3.2.5, Chemical Oxidation**: For this remedial technology it is stated that chemical oxidation introduces oxidizing chemicals into the subsurface to degrade chlorinated VOCs to carbon dioxide and water end products.

    Is chemical oxidation retained for treating chlorinated solvents? Provide rationale for retaining chemical oxidation for treating chlorinated solvents.

13. **Section 7.3.2.5, Thermal Treatment**: For Electric Resistance Heating (ERH) it is stated that existing buildings, buried utilities and buried structures in the upper bluff may prevent implementation of this technology for soil and shallow groundwater contamination.

    ERH has been successfully implemented in existing buildings and around buried utilities. The buried structure can be removed and ERH can then be implemented. Therefore, rationale for rejecting the technology for soil and shallow groundwater contamination is inappropriate.

14. **Section 7.3.2.5, Removal**: It is stated that typically removal is not feasible for wide- spread soil contamination with low to moderate contamination.

    This is not an appropriate rationale for rejecting the remedial technology. In the technical memorandum, removal is considered feasible for high level soil contamination. If high level soil contamination can be removed, then low to moderate soil contamination can also be removed.

15. **Section 7.3.2.7, Ex-Situ Treatment**: For Biological treatment only biopiles and land spreading was considered. A bio-slurry reactor was not considered. Include a bio-slurry reactor as a potential remedial technology.

16. **Section 7.3.2.7, Limited Soil Excavation and Disposal**: It appears that the document has already decided that for soil excavation only limited excavation will be necessary. This type of decision is made based on the clean up goal during feasibility study. Therefore, delete Limited from the sub-title.

17. **Section 7.3.2.7, Limited Soil Excavation and Thermal Desorption**: It appears that the document has already decided that for soil excavation only limited excavation will be necessary. Therefore, delete Limited from the sub-title. For thermal desorption both low temperature thermal desorption and high temperature thermal desorption need to be considered.

18. **Section 7.3.2.7, Limited Soil Excavation and Thermal Desorption**: Incineration has not been considered for ex-situ soil treatment. Include incineration as a remedial option.

19. **Section 7.3.2.7, Limited Soil Excavation and Physical/Treatment Disposal**: It appears that the document has already decided that for soil excavation only limited excavation will be necessary. Therefore, delete Limited from the sub-title.

20. **Section 7.3.3.3, Containment**: As discussed in comment 2, existing fill material in the Kreher Park and asphalt cannot be considered an engineered barrier.

21. **Section 7.3.3.3, Containment**: It is stated that existing down gradient extraction well EW-4 would be operated for an extended period of time to prevent contamination from migrating off-site with groundwater from the ravine fill unit. There are four extraction wells that are cycled. The extraction rate for all wells is less than 0.5 gpm. Based on this the extraction rate for EW-4 is less than 0.125 gpm. So far it has not been demonstrated that a very low flow rate of 0.125 gpm is capable of containing off-site migration of contamination.

22. **Section 7.3.3.3, Containment**: For effectiveness of the surface barrier it is stated that the engineered barriers would also prevent infiltration. This is incorrect because neither existing asphalt nor fill were designed to be an engineered barrier. Describing fill as low permeable soil does not make it an engineered barrier.

23. **Section 7.3.3.8, Ex-situ Treatment**: For implementability it is stated that on-site thermal treatment will result in significant disturbance. Explain how the disturbance will affect the implementability.

24. **Section 7.4.2.2, Institutional Control:** It is stated that because the Site is in an area serviced by municipal water supply, restriction would not restrict future site use. Clarify what is being said in this sentence.

25. **Section 7.4.2.3, Monitored Natural Recovery:** Revise the title of this section to Monitored Natural Attenuation since this is describing groundwater. The first sentence is redundant, therefore, remove the first sentence.

26. **Section 7.4.2.4, Containment**: It is stated that the deep well injection is not feasible for this site. Provide detailed explanation on why the deep well injection is not feasible for this site.

27. **Section 7.4.2.4, Containment**: The vertical barrier has been rejected by just stating that the vertical barrier would not be feasible for the underlying Copper Falls aquifer. Explain why the vertical barrier for the Copper Falls aquifer is not feasible.

28. **Section 7.4.2.4, Downgradient Groundwater Extraction**: It is stated that EW-4 is currently being used to prevent the off-site migration of the contaminants. The average flow rate for EW-4 is less than 0.125 gpm. It has not been demonstrated that this low flow from the ravine is capable of preventing off-site migration of the contaminants. Let us assume that the average low flow is capable of preventing the off-site migration during normal conditions. During precipitation the flow from the ravine is expected to be more than 0.125 gpm and at that time EW-4 will not be able to prevent the off-site migration. Currently 4 wells are cycled; therefore, EW-4 is operational only for 25 percent of time. Therefore, contamination will continue to migrate for 75 percent of time when EW-4 is not operational. This needs to be clarified.

29. **Section 7.4.2.5, Physical/Chemical Treatment**: PRBs are not retained for the under lying copper falls aquifer because other remedial alternatives may be more cost effective and efficient at achieving RAOs. It has not yet been demonstrated that other technologies when compared to PRBs are efficient and cost effective at achieving RAOs. The PRBs need to be retained for further evaluation.

30. **Section 7.4.2.6, Groundwater and NAPL**: It is stated that EW-4 is currently being used to prevent the off-site migration of the contaminants. The average flow rate for EW-4 is less than 0.125 gpm. It has not been demonstrated that this low flow from the ravine is capable of preventing off-site migration of the contaminants. Let us consider that the average low flow is capable of preventing the off-site migration during normal conditions. During precipitation the flow from ravine is expected to be more than 0.125 gpm and at that time EW-4 will not be able to prevent the off-site migration. Currently 4 wells are cycled; therefore, EW-4 is operational only for 25 percent of time. Therefore, contamination will continue to migrate for 75 percent of time when EW-4 is not operational. This needs to be clarified.

31. **Section 7.4.2.6, Groundwater and NAPL**: It is stated that groundwater extraction for containment for the copper falls aquifer was not retained for screening because this will provide little help with achieving RAOs. It has not yet been demonstrated that groundwater extraction for containment will provide little help and therefore this statement is considered speculative.

32. **Section 7.4.2.6, Groundwater and NAPL**: It is stated that 8,300 gallons of NAPL has been recovered since September 2000. Did 8,300 gallons of NAPL contain water? If it contained water how much water was present in 8,300 gallons of NAPL.

33. **Section 7.4.3.3, Monitored Natural Recovery:** Revise the title of this section to Monitored Natural Attenuation.

34. **Section 7.4.3.3, Monitored Natural Recovery:** It should state that additional shallow and deep monitoring wells would be required for MNA monitoring.

35. **Section 7.4.3.4, Containment – Engineered Vertical Barriers:** It is incorrect to state that vertical barriers would not be feasible for the underlying Copper Falls aquifer.

    Vertical barriers have been installed at depths of 100 feet. So the reason that the vertical barrier is not feasible for Copper Falls aquifer is inappropriate.

36. **Section 7.4.3.4, Containment – Engineered Vertical Barriers:** It is stated that dewatering would be required to reduce the hydraulic head that will be created behind each barrier. This would require continued operation of existing EW-4 in the upper bluff area.

    As stated in previous comments each extraction wells is extracting at an average flow rate of less than 0.125 gpm. This flow rate is very low and may not be capable of reducing hydraulic head as stated in this section.

37. **Section 7.4.3.4, Containment – Engineered Vertical Barriers:** For implementability it is stated that installation of vertical barrier wall for the underlying Copper Falls Aquifer would be extremely difficult. Deep vertical barriers have been installed and are implementable.

38. **Section 7.4.3.4, Containment – Engineered Vertical Barriers:** Remove last sentence in the discussion regarding implementability. The implementability of vertical barrier appears to be biased towards other technologies and actually does not have anything to do with vertical barriers.

39. **Section 7.4.3.4, Containment – Engineered Vertical Barriers:** As stated in the above comments the vertical barrier for Copper Falls aquifer is feasible and implementable; therefore, effectiveness for the vertical barriers for the Copper Falls aquifer needs to be described.

40. **Section 7.4.3.6, In-Situ Treatment – Air/Ozone Sparging:** For implementability it is stated that sparging is not feasible for remediation of free-phase hydrocarbon in source areas, it will likely be used in areas with low to moderate contaminant levels with another technology implementable for the source area. Why is the air/ozone sparging implementable for areas with low to moderate contaminants levels and not for high contaminant levels?

41. **Section 7.4.3.8, In-Situ Treatment – Electric Resistance Heating**: It is stated that ERH was not retained for shallow groundwater contamination because existing site buildings, buried utilities, and buried structures in the upper bluff area and the wood waste in layers in Kreher Park may prevent implementation. ERH has been successfully implemented inside

buildings and near buried utilities. Therefore including buildings and buried utilities in the statement is questionable.

42. **Section 7.4.3.8, In-Situ Treatment – Electric Resistance Heating**: It is stated that ERH raises temperature of the soil and groundwater, which increases mobility of NAPL that can be recovered by extraction wells. Provide reference to sites where ERH has been successfully implemented to increase mobility of NAPL which is then recovered by extraction wells.

43. **Section 7.4.3.8, In-Situ Treatment – Electric Resistance Heating**: It is stated that the removal of NAPL will also result in a reduction on the toxicity of the dissolved plume, and reduce potential for continued down gradient migration with groundwater, which will enhance the protection of human health and the environment. How much NAPL could be removed by ERH? What level of NAPL removal would start to show reduction on the toxicity of the dissolved plume and reduce potential for continued down gradient migration with groundwater which will enhance the protection of human health and the environment?

44. **Section 7.4.3.8, In-Situ Treatment – Dynamic Underground Stripping:** Effluent vapors are expected to be treated. Provide a description in the technology for the collection method of effluent vapors.

45. **Section 7.4.3.8, In-Situ Treatment – Dynamic Underground Stripping:** Pump and treat component for this technology needs to be described for this technology.

46. **Section 7.4.3.8, In-Situ Treatment – Dynamic Underground Stripping:** Provide the rationale for not including Hydrous Pyrolysis Oxidation (HPO) with this technology.

47. **Section 7.4.3.8, Removal – NAPL and Groundwater Extraction and Treatment:** It is stated that groundwater and NAPL extraction using the existing on-site treatment system was retained for screening. Effectiveness of the existing system to collect NAPL is uncertain and not demonstrated; therefore, the first sentence should be removed. The existing wells which can be demonstrated to be effective in removing NAPL should be considered as a component of the NAPL and groundwater extraction system during design, only if this technology makes it into the selected alternative.

48. **Section 7.4.3.8, Removal – NAPL and Groundwater Extraction and Treatment:** It is stated that since the extraction well began operating, a drop in artesian pressure has been observed in the confined Copper Falls aquifer near the extraction wells. Excessive pumping may further lower artesian pressures which would allow NAPL to migrate deeper into the Copper Falls aquifer.

    It has not been demonstrated that a drop in artesian pressure has been observed in the Copper Falls aquifer due to current pumping of the aquifer. Also, it has not been demonstrated that the artesian pressures are so high that it will prevent DNAPL from migrating vertically downward. These statements need to be deleted.

49. **Section 7.4.3.8, Removal – NAPL and Groundwater Extraction and Treatment:** It is stated that the effectiveness of a NAPL and groundwater extraction system is considered moderate to high. Operation of the existing groundwater extraction system has resulted in the removal of a significant volume of contaminant mass in the source area. This has reduced the potential for off-site migration of contamination.

    Based on volume of NAPL in the subsurface only a fraction has been removed and therefore it is incorrect to state that operation of the existing groundwater extraction system has resulted in the removal of a significant volume of contaminant mass in the source area. Since only a small fraction of contaminant mass has been removed it is incorrect to state that the contaminant mass removed so far has reduced potential for off-site migration. The off-site migration potential for contamination has not changed significantly. This section needs to be re-written based on what is stated above.

50. **Section 7.4.3.8, Removal – NAPL and Groundwater Extraction and Treatment:** It is stated that the effectiveness of a NAPL and groundwater extraction is considered moderate to high. Operation of the existing groundwater extraction system has resulted in the removal of a significant volume of contaminant mass in the source area. This has reduced the potential for off-site migration of contamination.

    Based on volume of NAPL in the subsurface only a fraction of volume has been removed, therefore, it is incorrect to state that the operation of the existing groundwater extraction system has resulted in the removal of a significant volume of contaminant mass in the source area. Since only a small fraction of contaminant mass has been removed it is incorrect to state that removal of contaminant mass removed so far has reduced potential for off-site migration. This has not yet been demonstrated by the data and based on the mass of contamination still present at the site the off-site migration potential for contamination has not changed significantly. This section needs to be re-written based on what is stated above.

51. **Section 7.5.1, Chemical of Potential Concern:** It is stated that the screening of sediment alternatives focuses on PAHs as the primary COPCs. VOCs and metals are also considered in the screening of certain process options for treatment.

    VOCs and metals are COPCs but the PRGs may be based on PAHs because VOCs and metals co-exist with PAHs. Therefore revise the above statement appropriately.

52. **Section 7.5.2.4, Subaqueous Cap:** The bullet listed item in this section does not address free product found in the bay area. This section needs to reflect State Chapter 30 requirements. It should be assumed that lake bed fill can not be completed without action of the State Legislature and Governor potentially making implementation difficult.

53. **Section 7.5.2.4, Confined Disposal Facility:** The construction of CDF in the Great Lakes to dispose and contain contaminated sediments and free product may require acceptance by

Army Corps of Engineers, State of Wisconsin, and GLNPO. This section needs to reflect State Chapter 30 requirements. It should be assumed that lake bed fill can not be completed without action of the State Legislature and Governor potentially making implementation difficult.

54. **Section 7.5.2.6, Dredging:** Although this alternative is retained in Table 7-9, the text should also state that this alternative is retained. Clarify in the text that this alternative is retained for further evaluation.

55. **Section 7.5.2.7, Ex-Situ Treatment:** Low temperature thermal desorption (LTTD) is not mentioned as a technology to be considered for Ex-situ treatment. Include discussion and assessment of LTTD as an alternative technology.

56. **Section 7.5.2.8, Ancillary Technology Including Disposal:** The CERCLA waste sent to off-site facilities has to meet the requirements of the U.S. EPA Offsite Rule.

57. **Section 7.5.2.8, Ancillary Technology Including Disposal**: The CERCLA waste sent to off-site facilities has to meet the requirements of the U.S. EPA Offsite Rule.

58. **Section 7.5.3.3, Monitored Natural Attenuation**: The 53 ug PAH /g sediment clean up level has not yet been finalized and accepted by the regulatory agencies. Therefore, this will need to be changed after EPA approves a cleanup level.

59. **Section 7.5.3.4, Containment – Subaqueous Capping**: The 53 ug PAH /g sediment clean up level has not yet been finalized and accepted by the regulatory agencies. Therefore, this will need to be changed after EPA approves a cleanup level.

60. **Section 7.5.3.4, Containment – Subaqueous Capping**: It is stated that sediments exceeding the proposed sediment cleanup level of 53 ug PAH/g and associated debris would be dredged or excavated to a depth of approximately four feet which would provide sufficient depth for emplacement …

    Does this mean four feet of sediment excavation below wood pile/debris?

61. **Section 7.5.3.4, Containment – Subaqueous Capping**: It is stated that the caps are effective for low solubility contaminants.

    There are high soluble VOCs present in the sediments. Therefore, capping may not be appropriate for the areas with high soluble VOCs. This needs to be described in this section.

62. **Section 7.5.3.5 Containment-CDF**: Creation of a CDF may have significant institutional barriers. It would require approval of the Army Corps of Engineers (ACOE), EPA, WDNR, City of Ashland and other regulatory agencies. Include discussion of the role of ACOE and other regulatory agencies in the approval process and evaluation of the probability that approval may not be attained due to the presence of COCs and coal tar free product.

63. **Section 7.5.3.5, Containment –CDF, Dredging**: There is no mention of double suction cutterhead dredge equipped with a shroud to reduce suspended solids or hydraulic dredge in this section. Why are these dredges not considered?

64. **Section 7.5.3.5, Containment –CDF, Capping and Geomembrane**: For capping, a two to three foot sand cap with top soil and vegetative cover is being proposed. Use of Geomembrane has not been provided in the subsection. The sand cap is permeable and will result in significant infiltration within the sheet pile enclosure.

65. **Section 7.5.3.6, Removal:** The text asserts that there is substantial potential for release of volatile contaminants to the air that could be caused by dredging activities. Coal tar from the former MGP facility is the compound which is found in the sediment as free phase product. Free phase coal tar is a viscous liquid similar in consistency to vegetable oil and is quite low in volatility and solubility which is comprised primarily of PAHs with some VOCs bound up in the mixture. That is why it is persistent in the environment, the PAHs are relatively stable compounds. Some of the sediment samples exhibit high Benzene and Naphthalene concentrations however it must be noted that these high concentrations are indicative of a free product coal tar mixture; the individual chemical constituents do not exist in a pure solvent form, they exist as a mixture along with the predominant PAHs (also very high in concentration in the sediment samples) which are extremely low in volatility. Thus, for instance, when removing wood debris from the sediment with an excavator or clamshell, it is the coal tar mixture which has low volatility, adsorbed to the wood debris that will be exposed to the atmosphere, not the pure solvent benzene or naphthalene. It is unlikely that concentrations of benzene or naphthalene would exceed OSHA 8-hr TWA for coal tar (400 mg/m3), benzene (3.2 mg/m3) or naphthalene (50 mg/m3). This is illustrated by the vapor probe data from the RI. The highest concentration of benzene found in an area known to have free product in the vicinity was 57 ug/m3 which is 1.78% of the OSHA TWA. Naphthalene was not even tested, likely because it is an order of magnitude less volatile than benzene (Henries coefficient 240) with a Henries coefficient of 22 ATM*M3water/M3 air.

66. **Section 7.5.3.6, Removal:** Use of dredge with a shroud reduces suspended sediments in the water column.

67. **Section 7.5.3.6, Removal:** An engineering control for minimizing release of dissolved or free phase contaminants to water beyond the Site should also include sheet piles. Include and describe sheet piles/sea walls as an engineering control.

68. **Section 7.5.3.8, Ex-situ Treatment:** Hydrocyclones were used quite effectively at a similar EPA site, Manistique Harbor, that site had large quantities of logs, branches, wood debris, chips, pulp and sawdust to separate out sand. Hydrocyclones should be retained as a potential separation technology that could be applied to those parts of the site that contain higher amounts of sand. At this point it is not clear from the site data what the percentage of sand is compared to organics and free product, thus it needs to be retained as a potential alternative.

69. **Section 7.5.3.8, Ex-situ Treatment**: Which of the dewatering techniques have been retained?

70. **Section 7.6.3.1, Offsite Disposal**: The off-site facility should meet the U.S. EPA off-site rule for accepting CERCLA waste.

71. **Section 7.6.3.2, Ancillary Solid Waste**: PPE are considered to be investigated derived waste and should be handled in accordance with the guidance document to handle investigation derived waste.

72. **Section 7.6.5, Monitoring**: Air monitoring will be necessary during sediment removal.

73. **Table 5-1:** This table needs to be updated. Same as comment #68 below.
    - WI surface water quality standards are applicable, not a TBC.
    - CBSQGs are a TBC and need to be in the table.
    - NR 140 is applicable to the contaminated GW at the site, not just any new disposal or management.
    - NR 720 is applicable to the contaminated vadose zone for soil, not just managed sediment that might be soil.

74. **Tables 6-1and 6-2:** These tables need to be updated with appropriate RAOs and there seems to be some important State requirements missing:
    - WI surface water quality standards
    - CBSQGs
    - NR 140 PALs for the contaminated GW (only federal MCLs are mentioned)
    - NR 720 RCLs for contaminated zone soils.

75. **Table 7-2, page 2:** In-Situ Chemical oxidation is listed as a process option to degrade "chlorinated VOCs". The primary COCs are coal tar and its components. VOCs such as Naphthalene and Benzene, are not chlorinated compounds. This option should be re-evaluated in light of the primary COCs at the site, not on the basis of chlorinated compounds.

    It is further stated that In-Situ Chemical oxidation is effective for high levels of contamination in source areas. This is not the case when free product is present, especially when a potentially explosive material such as coal tar is combined with certain oxidizing agents, a runaway reaction could occur which could result in an explosion. Even with modified Fenton's reaction based compounds the amount of oxidizing agent required to mineralize the volumes of free product at this site would be prohibitively expensive. This alternative should not be retained for consideration.

76. **Table 7-10, page 2**: Under the effectiveness column for the CDF alternative, it is stated that toxicity for all Site contaminants would be reduced by containment. Containment only reduces mobility; it does not change the nature of the contaminants and thus has no effect on

the toxicity of the contaminants. Remove all reference to reduction of toxicity for the containment alternative in this table.

If you have any questions or would like to discuss things further, please contact me at (312) 886-1999.

Sincerely,

Scott K. Hansen
Remedial Project Manager

cc: Dave Trainor, Newfields
Jamie Dunn, WDNR
Omprakash Patel, Weston Solutions, Inc.
Henry Nehls-Lowe, DHFS
Ervin Soulier, Bad River Band of the Lake Superior Chippewa
Melonee Montano, Red Cliffe Band of the Lake Superior Chippewa